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1603 Orrington Avenue/Suite 2000  
Evanston, Illinois 60201  
Telephone 847 - 905 - 7111  
Facsimile 847 - 905 - 7113

Date: MAY 16, 2005

To: EXAMINER LY, NGHI H.  
U.S. PATENT AND TRADEMARK OFFICE

Fax #: (571) 273-8300

From: FRANK C. NICHOLAS  
Phone #: (847) 424-2521

Client/Matter No.: GP-302117 (2760/58)

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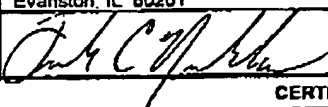
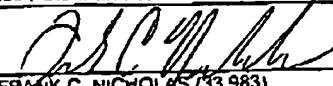
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<h1>TRANSMITTAL FORM</h1> <p>(to be used for all correspondence after initial filing)</p>	Attorney Docket No.	GP-302117 (2760/58)	<b>RECEIVED</b> <b>CENTRAL FAX CENTER</b> <b>MAY 16 2006</b>
	Application Number	10/077,013	
	Filing Date	FEBRUARY 13, 2002	
	First Named Inventor	JEFFREY M. STEFAN	
	Group Art Unit	2686	
	Examiner	LY, NGHI H.	

ENCLOSURES (check all that apply)		
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First Presentation of Multiple Dep. Claim					+ \$180=	—	+ \$360=	
					total add'l fee		total add'l fee	
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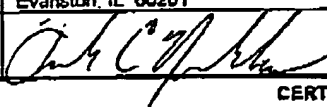
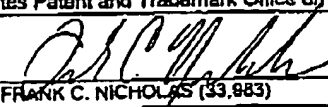
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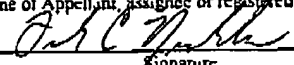
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	Claims After Amendment		Highest No. Previously Paid For	Present Extra	Rate	Add'l Fee	or	Rate	Add'l Fee
Total		Minus		0	x \$25=	0		x \$50=	
Indep.		Minus		0	x \$100=	0		x \$200=	
First Presentation of Multiple Dep. Claim					+ \$180=	—		+ \$360=	
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FRANK C. NICHOLAS (33 983)  
Name of Appellant, assignee or registered representative  
  
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May 16, 2006  
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PATENT  
Case No. GP-302117  
(2760/58)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of:	)	
	)	
JEFFREY M. STEFAN, ET AL.	)	
	)	Examiner: LY, NGHI H.
Serial No.: 10/077,013	)	
	)	Group Art Unit: 2686
Filed: FEBRUARY 13, 2002	)	
	)	Conf. No.: 1333
For: METHOD FOR BROADCAST	)	
FILTERING USING CONVEX HULLS	)	

APPEAL BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313

Dear Sir:

Please consider Appellant's appeal brief as follows.

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1. REAL PARTY IN INTEREST

The real party in interest is Assignee General Motors Corporation, a corporation having an office and a place of business at 300 Renaissance Center, Detroit, Michigan, 48265-3000.

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## 2. RELATED APPEALS AND INTERFERENCES

Appellant and the undersigned attorneys are not aware of any appeals or any interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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### 3. STATUS OF CLAIMS

Claims 1-3, 7-11, 15-17, 20 and 21 were rejected under 35 U.S.C. §103(a) as unpatentable over United States Patent 6,819,268 to Wakamatsu ("Wakamatsu") in view of United States Patent 6,249,252 to Dupray ("Dupray")

Claims 4-6, 12-14, 18 and 19 were rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray in view of United States Patent 5,627,549 to Park ("Park").

Claim 22 was rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray in further view of United States Patent 6,546,257 to Stewart ("Stewart").

Claims 1-22 are the claims on appeal. *See*, Appendix.



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4. STATUS OF AMENDMENTS

Claims 21 and 22 were added and entered, and no other amendments have been made.

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## 5. SUMMARY OF CLAIMED SUBJECT MATTER

In this summary of claimed subject matter, all citations are to the specification of United States Patent Application 10/077,013. Further, all citations are illustrative only and support for the cited element may be found elsewhere in the specification.

The invention relates to a method of providing information to a mobile vehicle user. The method includes receiving broadcast information 320 at the mobile vehicle 110, wherein the broadcast information comprises information location coordinate data, determining 330 whether the information location coordinate data resides within a convex hull 210, and presenting 345 the broadcast information to the mobile vehicle user based on the determination.

Another aspect of the invention provides a method of providing information to a mobile vehicle user. The method includes receiving broadcast information 320 at the mobile vehicle 110, wherein the broadcast information comprises information location coordinate data, determining 330 whether the information location coordinate data resides within a convex hull 210, and presenting 345 the broadcast information to the mobile vehicle user based on the determination. Additionally, the method records a plurality of vehicle location coordinates, and generates the convex hull 210 from the recorded vehicle location coordinates.

Another aspect of the invention provides a method of providing information to a mobile vehicle user including receiving 230 broadcast information at the mobile vehicle 110, wherein the broadcast information comprises information location coordinate data 1-16 and determining 330 whether the information location coordinate data resides within a convex hull 210 incorporating data from an in-vehicle GPS 126. Based on the determination, the broadcast information is presented 345 to the mobile vehicle. The convex hull 210 is determined in response to a plurality of received and stored longitudinal and latitudinal coordinate positions from the GPS unit 126, wherein the convex hull represents an area in which a mobile vehicle user often drives.

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6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-3, 7-11, 15-17, 20 and 21 were rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray.

Claims 4-6, 12-14, 18 and 19 were rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray in view of Park.

Claim 22 was rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray in further view of Stewart.

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## 7. ARGUMENTS

**A. Claims 1-3, 7-11, 15-17, 20 and 21 were rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray**

The §103(a) rejection of claims 1-3, 7-11, 15-17, 20 and 21 is traversed.

In order to maintain the §103(a) rejection of claims 1-3, 7-11, 15-17, 20 and 21, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references when combined must teach or suggest all the claim limitations. See MPEP 2143. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). See MPEP 2143.03. Because the references alone or in combination fail to teach, at a minimum, "determining whether the information location coordinate data resides within a convex hull" as claimed in claims 1, 9, 17, and 21, the §103(a) rejection must fall to those independent claims, as well as claims 2-3, 7-8, 10-11, 15-16 and 18-20 depending directly or indirectly from claims 1, 9 or 17 respectively.

The mere fact that the references can be modified as suggested by the Examiner does not render the resultant modification obvious unless the prior art also suggests the desirability of the combination. See, *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (Claims were directed to an apparatus for producing an aerated cementitious composition by drawing air into the cementitious composition by driving the output pump at a capacity greater than the feed rate. The prior art reference taught that the feed means can be run at a variable speed, however the court found that this does not require that the output pump be run at the claimed speed so that air is drawn into the mixing chamber and is entrained in the ingredients during operation. Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also *In re Frisch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device

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which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

The Examiner's basis for the alleged motivation is that:

Wakamatsu so that a convex hull of the verified locations may be used as a basis for determining a new of the target mobile station (see Dupray, column 6, lines 12-15).

(p.3, February 24, 2006 office action)

However, the Examiner cannot assert that any implementation of the "Dupray" system would result in the desired determination of a "new of the target mobile station." First, the Examiner cannot assert that an implementation of the Dupray system in Wakamatsu would achieve the desirable "matching the current position of the vehicle detected by the vehicle position detection section" (col. 2, lines 29-30, Wakamatsu). The Dupray system is designed to estimate the location of a mobile vehicle, and would therefore be ill-adapted for matching as per Wakamatsu.

Additionally, there can be no motivation to combine these references in light of the fact that Wakamatsu does not denounce use of the current position of the vehicle as anything less than an ideal technique for acquiring information relevant to a desired area, and Dupray does not proclaim use of a convex hull as the ideal location estimator.

Indeed, Dupray does not teach or suggest the claimed elements, and the Examiner correctly states that Wakamatsu does not teach or suggest the claimed element. Dupray teaches a wireless location using multiple location estimators. The only discussion of "convex hulls" relates to attempts to locate a target mobile station ("MS"). In other words, the convex hull of Dupray is used to locate a MS, rather than to provide information to a mobile vehicle user. At most, Dupray teaches (in col. 6):

For example, for a wireless location system utilizing  
the present invention, each location hypothesis, H,

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identifies an area for a target MS, and H can be used to identify additional related locations included in archived hypotheses generated by the same FOM as generated H. For instance, such related locations may be the area centroids of the archived hypotheses, wherein these centroids reside within the area hypothesized by H. Accordingly, such centroids may be used to retrieve the corresponding actual verified MS locations (i.e., the corresponding desired results), and these retrieved verified locations may be used to generate a new adjusted area that is likely to be more accurate than H. In particular, a convex hull of the verified locations may be used as a basis for determining a new location hypothesis of the target MS.

Even if Dupray teaches the term "convex hull," Dupray teaches use of a convex hull to locate a MS, rather than to determine whether an information location coordinate resides within a convex hull. Instead, Dupray teaches that the convex hull is used to determine a new location hypothesis of the target MS. In other words, Dupray is trying to locate a device, while the instant application already knows the location of the device.

Furthermore, Dupray teaches away from presenting the broadcast information to the mobile vehicle user based on the determination, and therefore teaches away from the combination with Wakamatsu. Dupray teaches only methods of locating a vehicle – one of ordinary skill in the art would not be motivated to present a mobile vehicle user with an estimate of their location based on a convex hull of their possible locations. Either a mobile vehicle user knows their current location and therefore does not need to receive a guess or hypothesis of their location, or the mobile vehicle user does not know their current location (such as a lost driver) and an estimate of their location based on a convex hull is of questionable utility.

There can be no motivation to combine a received information processing apparatus and wireless location using multiple location estimators. The rationale to modify or combine the prior art may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. MPEP §2144, *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also *In re Kotzab*, 217

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F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988) (references do not have to explicitly suggest combining teachings); *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning). The Examiner properly does not cite to any express or implied teachings in either Wakamatsu or Dupray, as neither reference, alone or in combination, provides any such teaching. Therefore, the Examiner must be attempting to rely on either knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. The Examiner makes no citation to any established scientific principles, or precedent established by prior case law, and therefore can only be relying on knowledge generally available to one of ordinary skill in the art.

However, the Examiner provides no evidence of the level of ordinary skill in the art. In a case such as this, where the Examiner is improperly attempting to combine disparate references teaching received information processing apparatus and wireless location using multiple location estimators, the Examiner's omission of any details regarding the level of skill of one in the art is especially telling. The mere fact that references can be combined is not sufficient to establish obviousness under 35 U.S.C. §103(a). *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990), MPEP §2143.01.

Additionally, claims 2-3, 7-8, 10-11, 15-16, 20 and 21 depend directly or indirectly from one of claims 1, 9 or 17 and are therefore patentable for at least the same reasons.

Withdrawal of the rejections to claims 1-3, 7-11, 15-17, 20 and 21 is requested.

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**B. Claims 4-6, 12-14, 18 and 19 were rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray in view of Park**

The §103(a) rejections of claims 4-6, 12-14, 18 and 19 are traversed.

Each of claims 4-6, 12-14, 18 and 19 depends directly or indirectly from one of claims 1, 9 and 17, and is therefore patentable over the references for at least the same reasons as above.

In addition, Park does not teach or suggest generating a convex hull from the recorded vehicle location coordinates, as claimed in claim 4. The Examiner's allegation (that Park teaches generating the geographic point from the recorded vehicle location coordinates) is irrelevant. The Examiner is arguing that Park teaches something that is not claimed – even if the argument is true, the argument bears no relation to the claims. Therefore, the claims are patentable over the combination of Wakamatsu and Park for at least this additional reason.

Furthermore, contrary to the Examiner's assertion, the combination of Wakamatsu and Dupray does not teach or suggest "generating the convex hull as recited in claim 1." Appellants note that the Examiner has mischaracterized the elements of claim 1. Wakamatsu makes no teachings relating to convex hulls, as acknowledged by the Examiner, and at most, Dupray teaches that a convex hull is generated based on verified locations (col. 6, lines 13-15) based on the area centroids of the archived hypotheses wherein the centroids reside within the area hypothesized. At most, Dupray teaches generating a convex hull based on hypothetical locations, rather than recording a plurality of vehicle location coordinates (claim 4) and therefore teaches away from the combination as suggested by the Examiner.

Withdrawal of the rejections to claims 4-6, 12-14, 18 and 19 is requested.



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**C. Claim 22 was rejected under 35 U.S.C. §103(a) as unpatentable over Wakamatsu in view of Dupray in further view of Stewart**

The §103(a) rejection of claim 22 is traversed.

Claim 22 depends from claim 21, and is therefore patentable over the references for at least the same reasons as above.

Additionally, the Examiner's attempted combination of Wakamatsu, Dupray and Stewart evidences the Examiner's use of impermissible hindsight. There is no teaching or motivation to "provide the teaching of Stewart into the system of Wakamatsu and Dupray so that information is retrieved which is within a predetermined position relative to the repeated travel pattern." Appellants' 'teach away' arguments asserted above are equally valid as applied to the three way combination of references.

First, the Examiner mistakes the claimed elements. Claim 21 requires receiving broadcast information at the mobile vehicle and presenting the broadcast information to the mobile vehicle user based on the determination of whether the information location coordinates reside within a convex hull. Claim 21 does not require the "retrieval" of any information, and therefore the Examiner fails to even allege a prima facie case of obviousness.

Second, there can be no proper motivation to combine the location estimates taught by Dupray with Stewarts providing promotional material based on repeated travel patterns. None of the three references teach the claimed convex hull from claim 21, and none of the three references teach that the convex hull represents an area in which a mobile vehicle user often drives. The mere fact that references can be combined is not enough to prove obviousness under §103(a). *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990), MPEP §2143.01.

Withdrawal of the rejection to claim 22 is requested.

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**SUMMARY**

The Examiner's rejections of claims 1-22 have been obviated by remarks herein supporting an allowance of pending claims 1-22 over the art of record. The Appellant respectfully submits that claims 1-22 herein fully satisfy the requirements of 35 U.S.C. §§ 102, 103 and 112. In view of the foregoing, favorable consideration and passage to issue of the present application is respectfully requested. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Dated: May 16, 2006


Respectfully submitted,  
JEFFREY M. STEFAN, ET. AL.

GENERAL MOTORS CORPORATION  
General Motors Legal Staff  
Mail Code 482-C23-B21  
300 Renaissance Center  
P.O. Box 300  
Detroit, MI 48265-3000  
Phone: (313) 665-4714

---

Anthony Luke Simon  
Registration No. 34,434  
Attorney for Appellant

CARDINAL LAW GROUP  
Suite 2000  
1603 Orrington Avenue  
Evanston, Illinois 60201  
Phone: (847) 905-7111  
Fax: (847) 905-7113



---

Frank C. Nicholas  
Registration No. 33,983  
Attorney for Appellant

May 16, 2006  
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### CLAIMS APPENDIX

1. A method of providing information to a mobile vehicle user comprising:  
receiving broadcast information at the mobile vehicle, wherein the broadcast information comprises information location coordinate data;  
determining whether the information location coordinate data resides within a convex hull; and  
presenting the broadcast information to the mobile vehicle user based on the determination.
2. The method of claim 1 wherein the broadcast information is received from a broadcast service selected from a group consisting of a radio data service, a radio broadcast data service, a satellite broadcast service, a radio broadcast service, and a wireless communications broadcast service.
3. The method of claim 1 wherein the information location coordinate data comprises a longitude and a latitude associated with the broadcast information.
4. The method of claim 1 further comprising:  
recording a plurality of vehicle location coordinates; and  
generating the convex hull from the recorded vehicle location coordinates.
5. The method of claim 4 further comprising:  
updating the convex hull based on a coordinate input.

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6. The method of claim 5 wherein the coordinate input is selected from a group consisting of a current vehicle location coordinate, a previous vehicle location coordinate, a recorded vehicle location coordinate input, a collection period, a collection frequency, a vehicle location coordinate retention period, a global positioning service quality indicator, and a user location coordinate input.

7. The method of claim 1 further comprising:  
transferring the broadcast information to a vehicle presentation manager;  
rendering the broadcast information with the vehicle presentation manager;  
and  
sending the broadcast information to a presentation device.

8. The method of claim 7 wherein the presentation device is selected from a group consisting of a visual display, an audio device, and an audio-visual display device.

9. A computer usable medium including a program for providing information to a mobile vehicle user comprising:  
computer program code to receive broadcast information at the mobile vehicle, wherein the broadcast information comprises information location coordinate data;  
computer program code to determine whether the information location coordinate data resides within a convex hull; and  
computer program code to present the broadcast information to the mobile vehicle user based on the determination.

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10. The computer usable medium of claim 9 wherein the broadcast information is received from a broadcast service selected from a group consisting of a radio data service, a radio broadcast data service, a satellite broadcast service, a radio broadcast service, and a wireless communications broadcast service.

11. The computer usable medium of claim 9 wherein the information location coordinate data comprises a longitude and a latitude associated with the broadcast information.

12. The computer usable medium of claim 9 further comprising:  
computer program code to record a plurality of vehicle location coordinates;  
and  
computer program code to generate the convex hull from the recorded vehicle location coordinates.

13. The computer usable medium of claim 12 further comprising:  
computer program code to update the convex hull based on a coordinate input.

14. The computer usable medium of claim 13 wherein the coordinate input is selected from a group consisting of a current vehicle location coordinate, a previous vehicle location coordinate, a recorded vehicle location coordinate input, a collection period, a collection frequency, a vehicle location coordinate retention period, a global positioning service quality indicator, and a user location coordinate input.

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15. The computer usable medium of claim 9 further comprising:  
computer program code to transfer the broadcast information to a vehicle presentation manager;  
computer program code to render the broadcast information with the vehicle presentation manager; and  
computer program code to send the broadcast information to a presentation device.

16. The computer usable medium of claim 15 wherein the presentation device is selected from a group consisting of a visual display, an audio device, and an audio-visual display device.

17. A system for providing information to a mobile vehicle user comprising:  
means for receiving broadcast information at the mobile vehicle, wherein the broadcast information comprises information location coordinate data and at least one data string;  
means for determining whether the information location coordinate data resides within a convex hull; and  
means for presenting the broadcast information to the mobile vehicle user based on the determination.

18. The system of claim 17 further comprising:  
means for recording a plurality of vehicle location coordinates; and  
means for generating the convex hull from the recorded vehicle location coordinates.

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19. The system of claim 17 further comprising:

means for updating the convex hull based on a coordinate input.

20. The system of claim 17 further comprising:

means for transferring the broadcast information to a vehicle presentation manager;

means for rendering the broadcast information with the vehicle presentation manager; and

means for sending the broadcast information to a presentation device.

21. A method of providing information to a mobile vehicle user comprising:

receiving broadcast information at the mobile vehicle, wherein the broadcast information comprises information location coordinate data;

determining whether the information location coordinate data resides within a convex hull incorporating data from an in-vehicle GPS; and

presenting the broadcast information to the mobile vehicle user based on the determination.

22. The method of claim 21 wherein the convex hull is determined in response to a plurality of received and stored longitudinal and latitudinal coordinate positions from the GPS unit, wherein the convex hull represents an area in which a mobile vehicle user often drives.

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**Evidence Appendix**

None

**Related Proceedings Appendix**

None.